

IN THE CLAIMS:

1. (Currently Amended) A composition, comprising:

a porous or semi-porous implant material comprising a collagen scaffolding having particles of demineralized bone matrix (DBM) dispersed within the collagen scaffolding, said implant material having been subjected to crosslinking with a carbodiimide crosslinking agent under conditions that crosslink the porous or semi-porous implant material but retain an osteoinductive capacity of the DBM, so as to provide an implant material exhibiting a combination of osteoconductive and osteoinductive properties;

~~a collagen protein, said collagen protein from a source other than the demineralized bone matrix; and~~

~~a plasticizer; and~~

~~wherein the composition is cross-linked.~~

2. (Canceled)

3. (Currently Amended) The composition of claim 21, wherein the carbodiimide crosslinking agent is N-(3-dimethylaminopropyl)-N-ethylcarbodiimide hydrochloride (EDC).

4. (Currently Amended) The composition of claim 21, wherein the composition is chemically cross-linked in the presence of N-hydroxysuccinimide (NHS).

5. (Original) The composition of claim 1, further comprising one or more growth factors.

6. (Currently Amended) The composition of claim 1, wherein the composition comprises from 2 to 95 wt/% DBM based on the combined weight of DBM and collagen-protein.

7. (Currently Amended) The composition of claim 1, wherein the composition comprises from 55 to 85 wt/% DBM based on the combined weight of DBM and collagen-protein.

8-10. (Canceled)

11. (Currently Amended) The composition of claim 8~~1~~, wherein the DBM particles have an average particle size of up to 5 mm.

12. (Currently Amended) The composition of claim 8~~1~~, wherein the DBM particles have an average particle size ranging from 53 to 850 μm .

13-19 (Canceled)

20. (Original) The composition of claim 1, wherein the composition is crosslinked under acidic conditions.

21-25 (Canceled)

26. (Original) The composition of claim 1, further comprising an additive selected from the group consisting of collagenase inhibitors, growth factors, antibodies, metalloproteinases, cell attachment fragment(s), and combinations thereof.

27. (Original) The composition of claim 26, wherein the additive is bound to the collagen or DBM.

28. (Original) The composition of claim 26, wherein the additive is not bound to the collagen or DBM.

29-48. (Canceled)

49. (Currently Amended) A composition comprising:

demineralized bone matrix (DBM); and

a porous or semi-porous collagen sponge material~~protein, said collagen protein from a source other than said demineralized bone matrix;~~

said DBM in the form of DBM particles dispersed within the collagen sponge material~~protein~~; and

wherein the composition is cross-linked via an amide linkage.

50. (Original) The composition of claim 49, further comprising one or more growth factors.

51. (Previously Amended) The composition of claim 49, wherein the composition comprises from 2 to 95 wt/% DBM based on the combined weight of DBM and collagen protein.

52. (Previously Amended) The composition of claim 49, wherein the composition comprises from 55 to 85 wt/% DBM based on the combined weight of DBM and collagen protein.

53. (Currently Amended) The composition of claim 49, wherein the composition exhibits a capacity to maintain its shape when hydrated and regain its height following compression when hydrated~~composition is in a paste form that is injectable or packable into a wound site for bone or soft tissue repair.~~

54-55. (Canceled)

56. (Currently Amended) The composition of claim ~~55~~49, wherein the DBM particles have a particle size of up to 5 mm.

57. (Currently Amended) The composition of claim ~~55~~49, wherein the DBM particles have a particle size of from 53 to 850 μm .

58. (Currently Amended) A composition for bone or soft tissue repair, comprising:

a sterile, implantable osteoinductive composition in a paste form that can be injected or packed into a wound site for bone or soft tissue repair, said osteoinductive composition including an aqueous diluent and demineralized bone matrix (DBM) dispersed within

collagen solids, ~~said collagen solids from a source other than said DBM~~, said DBM comprising from 2 to 95% by weight of the osteoinductive composition based on the combined weight of the DBM and collagen solids, said DBM being in the form of particles having an average diameter of up to about 5 mm, said osteoinductive composition further having been subjected to conditions which introduce crosslinking between molecules of said particulate collagen solids and/or between molecules of the collagen solids and the DBM particles, wherein said conditions comprise irradiating the osteoinductive composition with e-beam or gamma irradiation.

59. (Previously Presented) The composition of claim 58, further comprising one or more growth factors.

60. (Previously Presented) The composition of claim 58, wherein said conditions comprise irradiating the osteoinductive composition with e-beam irradiation.

61. (Previously Presented) The composition of claim 58, wherein said conditions comprise irradiating the osteoinductive composition with gamma irradiation.

62. (Previously Presented) The composition of claim 58, wherein the composition comprises from 55 to 85 wt/% DBM based on the combined weight of DBM and collagen solids.

63. (Previously Presented) The composition of claim 58, wherein the DBM particles have an average particle size of from 53 to 850 μm .

64. (Previously Presented) The composition of claim 58, also comprising a plasticizer.

65. (New) The composition of claim 1, also comprising a plasticizer.

66. (New) The composition of claim 49, also comprising a plasticizer.